

WHAT IS CLAIMED IS:

1. A modem comprising:
 - a first interface interfacing with a subscriber terminal;
 - a second interface interfacing with a switching system;
 - a detector detecting a communication connection status with the
 - 5 subscriber terminal and outputting a detection result signal; and
 - a controller processing data communication between the subscriber terminal and the switching system, and controlling the second interface to terminate operations of the second interface if a non-connection signal is inputted from the detector.
2. The modem as claimed in claim 1, wherein the detector detects whether a signal is transmitted to the first interface from the subscriber terminal, and outputs the non-connection signal if a non-transmission status of the signal lasts for a predetermined time period.
3. The modem as claimed in claim 2, wherein the detector detects whether a synchronization signal is inputted for matching data transmission speed from the subscriber terminal, and generates the non-connection signal if the non-input status of the synchronization signal lasts for a predetermined
- 5 time period.
4. The modem as claimed in claim 3, further comprising:

a light-emitting device mounted on an exterior of a main body,
indicating a connection status; and

a switching device transiting on and off electric power transmitted
5 from a power supply to the light-emitting device,

wherein the switching device drives the transiting of the light-emitting
device in correspondence with a signal outputted from the detector.

5. The modem as claimed in claim 3, wherein the first interface
interfaces with the subscriber terminal in one of Ethernet, Universal Serial Bus
(USB), Phoneline Network Alliance (PNA), Bluetooth, wireless LAN, and
home RF protocol.

6. The modem as claimed in claim 3, wherein the first interface
includes:

a matching circuit unit matching an impedance with respect to a
communication interface with the subscriber terminal; and

5 an Ethernet transceiver transmitting and receiving an Ethernet data
packet with the subscriber terminal.

7. The modem as claimed in claim 6, wherein the switching
system is an ATM switching system, and the second interface has a modem
signal processor that converts a received ATM cell to fit in a frame format
required by one of the controller and the ATM switching system, said second

5 interface outputting the converted ATM cell to a corresponding transmission path, said second interface comprising:

a modem signal transmission/reception unit converting a digital signal received from the modem signal processor into an analog signal and outputting the analog signal to the ATM switching system, and converting an
10 analog signal received from the ATM switching system to a digital signal and outputting the digital signal to the modem signal processor.

8. The modem as claimed in claim 1, further comprising a connector disposed in an inlet groove of a main body to connect a communication cable extended from the subscriber terminal to the first interface, wherein the detector is mounted in the inlet groove that
5 communicates with the communication cable as the communication cable is matched to the connector, and detects a communication connection status of the subscriber terminal.

9. The modem as claimed in claim 1, wherein the second interface stops the generation of a signal that maintains a channel with the switching system if an operation stop signal is inputted from the controller.

10. The modem as claimed in claim 1, further comprising a switching device mounted on a path between the second interface and a power supply, wherein the controller controls the switching device to be transited to the off position if the non-connection signal is inputted.

11. A modem, comprising:
a first interface interfacing with a subscriber terminal;
a second interface interfacing with a switching system;
a controller processing a data communication between the subscriber
5 terminal and the switching system;
a detector detecting a communication connection status with the
subscriber terminal, and outputting a connection signal or a non-connection
signal according to the detection result; and
a switching device transiting on and off a supply of electric power to
10 the second interface from a power supply according to an input of the
connection signal or the non-connection signal.

12. The modem as claimed in claim 11, wherein the detector
detects whether a signal is transmitted to the first interface from the subscriber
terminal, and outputs the non-connection signal if a non-transmission status of
the signal lasts for a predetermined time period.

13. The modem as claimed in claim 12, wherein the detector
detects whether a synchronization signal is inputted to match a data
transmission speed from the subscriber terminal, and generates the non-
connection signal if the non-input status of the synchronization signal lasts for
5 a predetermined time period.

14. The modem as claimed in claim 12, further comprising:

a light-emitting device mounted on an exterior of a main body,
indicating a connection status; and

a switching device transiting on and off electric power supplied from a
5 power supply to the light-emitting device, wherein the switching device drives
the transiting on and off of the light-emitting device in correspondence with a
signal outputted from the detector.

15. The modem as claimed in claim 11, wherein the first interface
interfaces with the subscriber terminal in one of Ethernet, Universal Serial Bus
(USB), Phoneline Network Alliance (PNA), Bluetooth, wireless LAN, and
home RF.

16. The modem as claimed in claim 14, wherein the first interface
includes a matching circuit unit matching an impedance with respect to a
communication interface with the subscriber terminal; and

an Ethernet transceiver transmitting and receiving an Ethernet data
5 packet with the subscriber terminal.

17. The modem as claimed in claim 16, wherein the switching
system is an ATM switching system,

and the second interface comprises,

a modem signal processor converting a received ATM cell to fit
5 in a frame format required by the controller or the ATM switching system and
outputting the converted ATM cell to a corresponding transmission path, and

a modem signal transmission/reception unit converting a digital signal received from the modem signal processor into an analog signal and outputting the analog signal to the ATM switching system, and converting an analog signal received from the switching system to a digital signal and outputting the digital signal to the modem signal processor.

18. A modem, comprising:
a first interface interfacing with a subscriber terminal;
a second interface interfacing with a switching system;
a controller processing a data communication between the subscriber terminal and the switching system; and

a detector detecting a communication connection status with the subscriber terminal, and outputting one of a connection signal and a non-connection signal according to the detection result,

wherein the second interface stops the operation thereof if the non-connection signal is inputted from the detector and releases a communication channel with the switching system.

19. A method for controlling a modem having a first interface interfacing with a subscriber terminal, a second interface interfacing with a switching system, a detector detecting a communication connection status with the subscriber terminal, and a controller processing a data communication between the subscriber terminal and the switching system, comprising the steps of:

judging the communication connection status with the subscriber terminal; and

terminating operation of the second interface if said communication
10 connection status is judged as a non-connection status in the judging step.

20. The method as claimed in claim 19, wherein the judging step detects whether a signal is transmitted from the subscriber terminal to the first interface, and judges a connection status as a non-connection status if a non-reception status of the signal lasts for a predetermined time period.

21. The method as claimed in claim 19, wherein the judging step detects whether a synchronization signal matching a data transmission speed is inputted from the subscriber terminal, and judges a connection status as a non-connection status if a non-input status of the synchronization signal lasts for a
5 predetermined time period.

22. The method as claimed in claim 19, wherein the terminating step terminates a supply of electric power to the second interface.

23. The method as claimed in claim 19, wherein the terminating step controls the second interface to terminate the operation thereof to maintain a channel with the switching system.